

Shit Happens 12

Nachhaltige Implementierung von Sanitär- und
Wasserwirtschaftsprojekten in Afrika und Europa
Erfahrungen der letzten 10 Jahre

- Water supply
- R&D
- Sanitation



Dienstag, 31. Jänner 2012, 16:00

Hörsaal HS 21, Universität für Bodenkultur Wien (BOKU)

Muthgasse 18, 1190 Wien

Programm

1. **Einleitung (Günter Langergraber)**

- **Was ist der EcoSan Club?**
- **Übersicht über Aktivitäten der letzten 10 Jahre**

2. Der EcoSan Club aus der Sicht der Auftraggeber

- Robert Burtscher (ADA)

3. Vortrag "Operation and maintenance"

- Elke Müllegger und Elisabeth Freiberger

4. Vortrag "Das Tropenhaus Wolhausen"

- Martin Wafler (seecon)

18:00 (18:30): 10.Ordentliche Generalversammlung des EcoSan Clubs

Im Anschluss: Gemütliches Ausklingen des Abends

EcoSan Club

Registriert als „**EcoSan Club - Ökologische Konzepte für das Stoffmanagement in Siedlungen**“ am 20.02.2002.

Gründungsmitglieder:

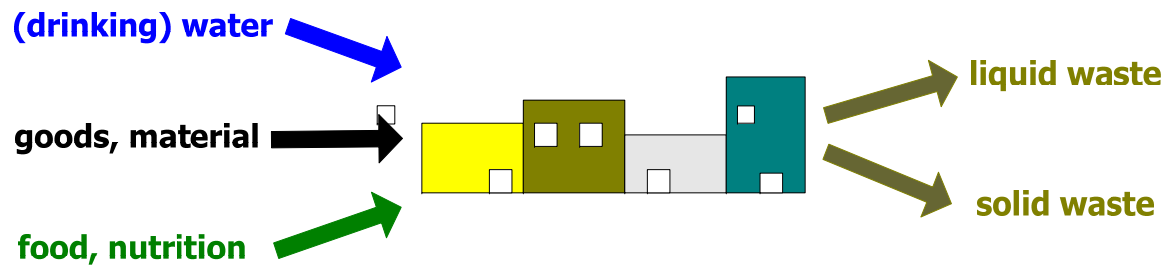
1. Thomas Ertl (Siedlungswasserbau, BOKU)
2. Nikolaus Fleischmann (Consultant)
3. Helmut Jung (Siedlungswasserbau, BOKU)
4. Andreas Knapp (UNICEF Nepal)
5. Günter Langergraber (Siedlungswasserbau, BOKU)
6. Markus Lechner (ESC Consulting KG)
7. Hans Schattauer (Austrian Development Agency, Kampala, Uganda)
8. Kirsten Sleytr (BOKU)

EcoSan Club

Statuten: §2 Zweck

1. Der Verein „EcoSan Club“ bezweckt als gemeinnütziger Verein, dessen Tätigkeit parteipolitisch nicht gebunden und nicht auf Gewinn gerichtet ist, die Förderung des Umweltschutzes, insbesondere die **Förderung ökologischer Konzepte für das Stoffmanagement in Siedlungen**.
2. Übergeordnetes Ziel des Vereins ist es, im Rahmen des **Managements von Reststoffen aus Siedlungen** Stoffkreisläufe zu schließen und damit zu einer nachhaltigen Entwicklung beizutragen.
3. Die Begriffe „Reststoff“ und „Stoffmanagement“ sind im Rahmen des Vereinszweckes zunächst auf **Stoffe, die traditionell Bereichen der Siedlungswasserwirtschaft zuzuordnen sind** (Urin, Fäkalien und Abwasserteilströme, die nicht aus der Toilette kommen), **und biogene Abfälle** beschränkt.

Conventional sanitation concepts



- human excreta are mixed with water and flushed away.
- high water demand
- spreading of pathogens and micro-pollutants (hormones and medical residues)
- loss of economic option for reuse
- disinfection has to be done as an additional expensive treatment step
- Sewer lines are the most expensive part (70-90 % of the investment costs)

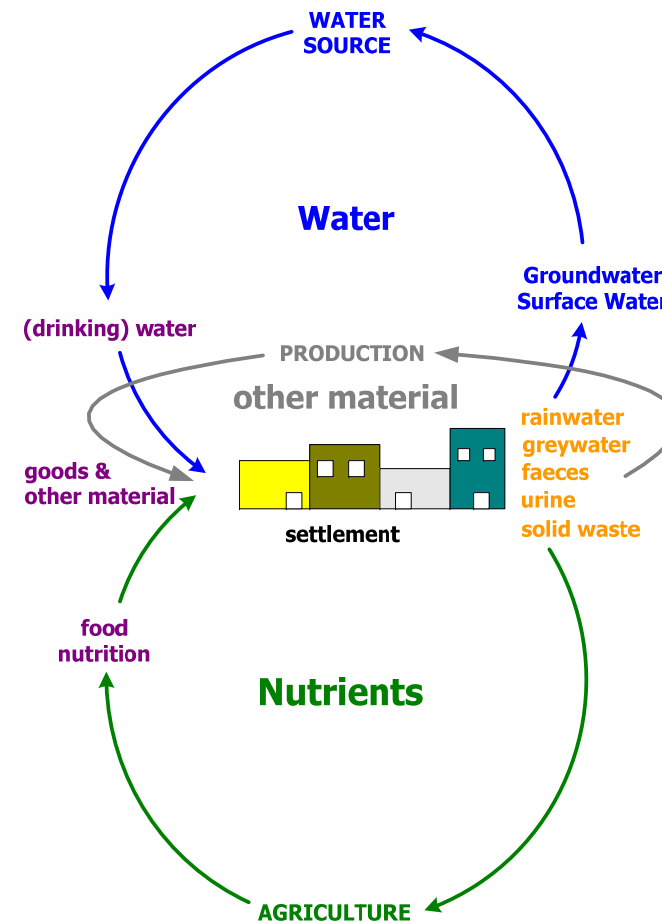
Resources-oriented sanitation concepts

- Wastewater contains among other things
 - Pathogens
 - Organic matter
 - Nutrients
 - Danger for health and environment

- Goals of sanitation
 1. elimination of pathogens
 2. prevention of environmental pollution
 - 3. recycling of nutrients and water (waste as resource!)**

Resources-oriented sanitation concepts

- wastewater is a resource and not waste
- closing water, nutrient, material, energy cycles on a local scale
- resource and reuse oriented
- single technologies are only means to an end
- sanitation and waste
- liquid and solid waste

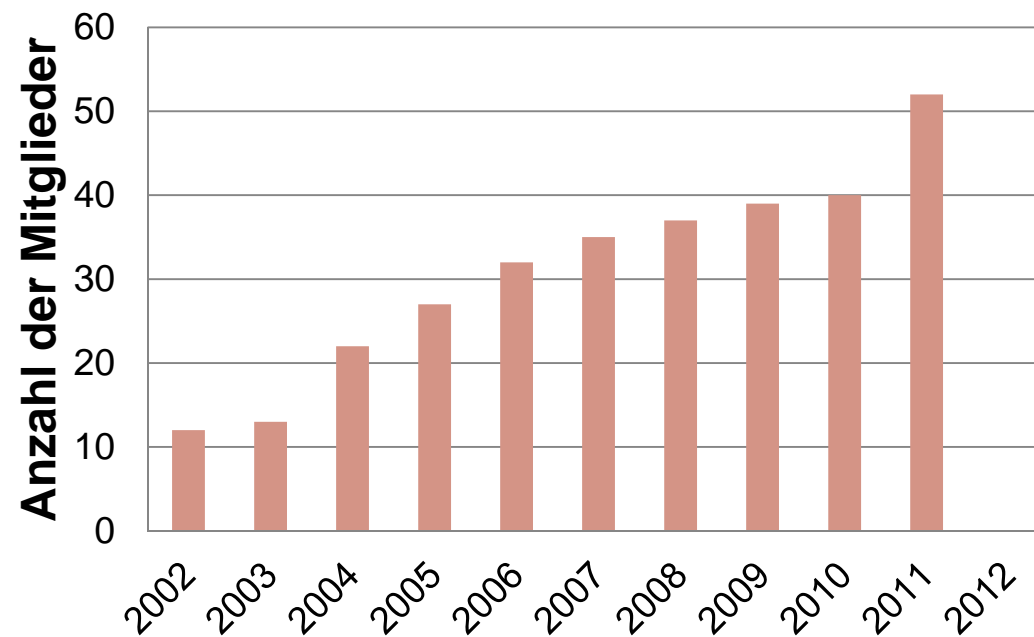


EcoSan Club

Vorstand

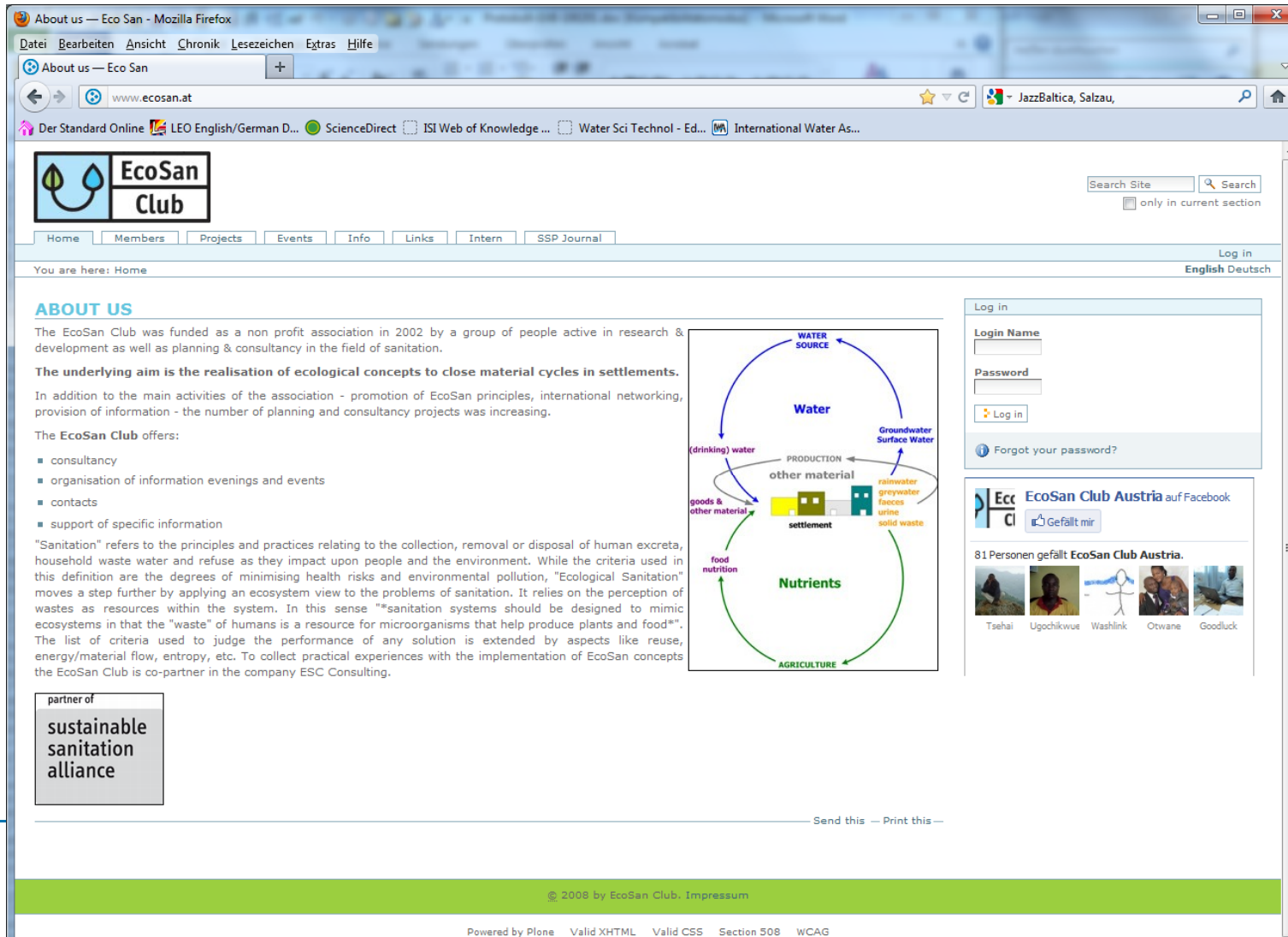
Obmann	Kassier	Schriftführer
Markus Lechner (2002-2003) Günter Langergraber (ab 2003)	Thomas Ertl (2002-2005) Stefan Jung (2005-2008) Markus Lechner (ab 2008)	Günter Langergraber (2002-2003) Martin Hammer (2003-2009) Nicole Kläsener (ab 2009)
Obmann-Stv.	Kassier-Stv.	Schriftführer-Stv.
Helmut Jung (2002-2006) Hanno Hierzegger (ab 2006)	Kirsten Sleytr (2002-2004) Stefan Jung (2004-2005) Christian Schwarz-Herda (2006-2007) Markus Lechner (2007-2008) Stefan Jung (ab 2008)	Nikolaus Fleischmann (ab 2002)

EcoSan Club – Mitglieder



Österreich
Äthiopien
Deutschland
Ghana
Indian
Kamerun
Kanada
Kap Verde
Kenia
Marokko
Nepal
Nigeria
Tansania
Türkei
Uganda
UK
USA

EcoSan Club – www.ecosan.at



The screenshot shows the website's interface in a Mozilla Firefox browser window. The address bar displays 'www.ecosan.at'. The page features a navigation menu with links for Home, Members, Projects, Events, Info, Links, Intern, and SSP Journal. A search bar is located in the top right corner. The main content area is titled 'ABOUT US' and contains the following text:

ABOUT US

The EcoSan Club was funded as a non profit association in 2002 by a group of people active in research & development as well as planning & consultancy in the field of sanitation.

The underlying aim is the realisation of ecological concepts to close material cycles in settlements.

In addition to the main activities of the association - promotion of EcoSan principles, international networking, provision of information - the number of planning and consultancy projects was increasing.

The **EcoSan Club** offers:

- consultancy
- organisation of information evenings and events
- contacts
- support of specific information

"Sanitation" refers to the principles and practices relating to the collection, removal or disposal of human excreta, household waste water and refuse as they impact upon people and the environment. While the criteria used in this definition are the degrees of minimising health risks and environmental pollution, "Ecological Sanitation" moves a step further by applying an ecosystem view to the problems of sanitation. It relies on the perception of wastes as resources within the system. In this sense "sanitation systems should be designed to mimic ecosystems in that the "waste" of humans is a resource for microorganisms that help produce plants and food". The list of criteria used to judge the performance of any solution is extended by aspects like reuse, energy/material flow, entropy, etc. To collect practical experiences with the implementation of EcoSan concepts the EcoSan Club is co-partner in the company ESC Consulting.

partner of
sustainable sanitation alliance

The diagram illustrates the material cycle in settlements, showing the flow of water and nutrients. It includes components like WATER SOURCE, Groundwater Surface Water, settlement, PRODUCTION, other material, goods & other material, food nutrition, AGRICULTURE, and Nutrients. Arrows indicate the flow of water and nutrients between these components.

Log in

Forgot your password?

EcoSan Club Austria auf Facebook

81 Personen gefällt EcoSan Club Austria.

Tsehai Ugochikwue Washlink Otwane Goodluck

Send this — Print this —

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ESC Consulting KG

- Gegründet 2004, um Projekte besser abwickeln zu können
- Zuerst OEG, ab 2009 KG
- Gesellschafter:
 - EcoSan Club
 - Markus Lechner
 - Norbert Weissenbacher
- Geschäftsführer: Norbert Weissenbacher (ab 2009)

EcoSan Club – Aktivitäten 2002-2012

1. Veranstaltungen
2. Publikationen
3. Mitarbeit in internationalen Gremien/Organisationen
4. Projekte – Forschung
5. Projekte – Implementierung

EcoSan Club – Aktivitäten 2002-2012

1. Veranstaltungen

- **SHIT HAPPENS**: 7 events since the year 2000.
 - 2000, 2002, 2004, 2006, 2007, 2008, 2012
- A full day **workshop for architects and planners** on resources-oriented wastewater systems on 16.09.2004, at Kommunalkredit Austria KG, Vienna.
- „*Sanitation is Dignity – Where would you hide?*“: 25.-30.09.2007, Exhibition at the Campus of the University of Vienna.

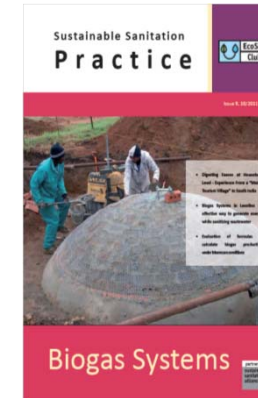
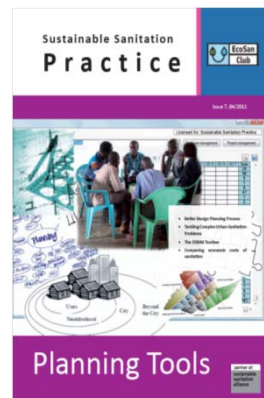
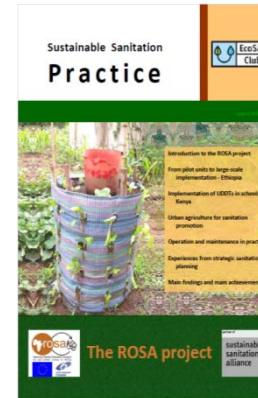
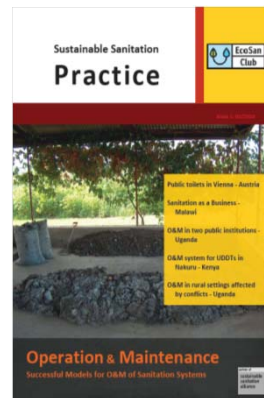
EcoSan Club – Aktivitäten 2002-2012

2. Publikationen

- 2 Broschüren für die ADA
 - Ecological Sanitation – a sustainable approach to the future (2004)
 - Solutions in Sanitation – Planning principles (2008)
- 1 Journal paper in Environment International
- Beiträge zu Konferenzen
- ab 2009: **Sustainable Sanitation Practice (SSP) Journal**

Sustainable Sanitation Practice (SSP) Journal

www.ecosan.at/ssp



EcoSan Club – Aktivitäten 2002-2012

3. Mitarbeit in internationalen Gremien/Organisationen

- Sustainable Sanitation Alliance (SuSanA)
- www.susana.org
- Gegründet 2007
- EcoSan Club ist Gründungsmitglied
- Co-lead der Working Group 10 "O&M"

sustainable sanitation alliance

Key messages

1. Operation and maintenance (O&M) is of paramount importance for the durable implementation and function of sanitation systems, however it is often neglected.
2. Level of O&M is highly linked to ownership of a facility and the basic understanding of the technology and its functions.
3. Every technology that is implemented in a sanitation system requires proper O&M to function.
4. Different technologies at different steps of the sanitation chain need different people and different responsibilities for O&M.
5. Institutional responsibilities as well as effective mechanisms for cost recovery are needed to ensure sustainable O&M.

Aims of this factsheet

The aims of this factsheet are to introduce possible concepts of O&M for sustainable sanitation systems and to show successful implemented examples for O&M.

The target group for this fact sheet consists of sanitation practitioners, researchers and policy makers, as well as of development practitioners who are less familiar with the topic of O&M of sanitation systems. Readers are also referred to the factsheets of other working groups of SuSanA, e.g. costs and economics, productive sanitation systems.

Introduction

Appropriate sanitation facilities can provide critical improvement in community health, education, poverty and many other interlinked issues. However, maximum benefits will only be achieved when the sanitation facilities operate continuously and at full capacity in conformity with acceptable standards of quantity and quality. Accordingly, O&M tasks must be carried out effectively and efficiently.

SuSanA – factsheet

Operation and maintenance of sustainable sanitation systems

Version 2 (December 2010)

In practice, O&M of sanitation systems receives less attention compared to the design and construction phases, or it is even completely neglected. Especially in developing countries, O&M of decentralised sanitation systems is neglected to a great extent. Among the consequences are poor or non-functioning systems that damage the environment and people's health. Without proper O&M, well designed and nicely constructed infrastructure will sooner or later break down.

Reasons for non-functioning O&M

The reasons for non-functioning O&M services range from a lack of ownership or delegated responsibility for O&M, or a lack of skilled labour, and high operating costs to excessive repair and replacement expenses. Additionally, the technical options chosen are not always the best suited to the environment in which they shall be operated. Other reasons are closely related to the set-up of projects, which often focus only on construction of hardware instead of software components, because it is simpler and less time consuming. Consultation with the local stakeholder and users regarding the most appropriate system for the local conditions is often low.

In most cases where the provision of sanitation services has failed, the root causes have been poor management, lack of planning and failure to generate revenue sufficient to operate and maintain systems (Bräustleber, 2007).

It is obvious the "efficient and effective management of the system is most essential for their proper functioning" (Örtenburg, et al., 2006). It is therefore indispensable that O&M of sanitation systems has to be seen in a holistic conceptual framework of sanitation planning. Tasks and responsibilities have to be made abundantly clear and divided among the involved actors/stakeholders e.g. between the municipality, CSOs, users and the private sector. Thus governments and external support agencies are starting to recognize the importance of integrating O&M components in all development phases of water supply and sanitation projects (Bräuké and Bredero, 2003).

EcoSan Club – Aktivitäten 2002-2012

4. Projekte - Forschung

- **NETSSAF** "*Network for the development of sustainable approaches for large scale implementation of sanitation in Africa*", Duration: June 2006 - November 2008; funded within the EU 6th Framework Programme, Sub-priority "Global Change and Ecosystems" (see <http://www.netssaf.net/>).
- **ROSA** "*Resource-Oriented Sanitation concepts for peri-urban areas in Africa*"; Duration: October 2006 - March 2010; funded within the EU 6th Framework Programme, Sub-priority "Global Change and Ecosystems" (see Issue 4 (July 2010) of SSP Journal and <http://rosa.boku.ac.at/>).
- **NASPA** "*Sustainable Sanitation – Practical Application*"; Duration: February 2007 - July 2009; funded by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW).
- **CLARA** "*Capacity-Linked water supply and sanitation improvement for Africa's peri-urban and Rural Areas*"; Duration: March 2011 - February 2014; funded within the EU 7th Framework Programme, Theme "Environment (including Climate Change)" (see <http://clara.boku.ac.at/>).

CLARA

Capacity-Linked water supply and sanitation improvement for Africa's peri-urban and Rural Areas

Contract # 265676

a Collaborative Project
within the EU 7th Framework Programme
Theme "Environment (incl. Climate Change)"
(Call FP7.AFRICA.2010)

1.3.2011 – 28.2.2014



Capacity-Linked water and sanitation
for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

CLARA background



Capacity-Linked water and sanitation
for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

CLARA has been developed based on the results and experiences from the **ROSA** project¹ and the **NETSSAF** Coordination Action² (both FP6)

- CLARA comprises the key partners from ROSA and NETSSAF
- ROSA and NETSSAF were focussed on sanitation issues, CLARA considers also water supply issues targeting to promote resources-oriented concepts.

¹ <http://rosa.boku.ac.at/>

² <http://www.netssaf.net/>

ROSA and NETSSAF

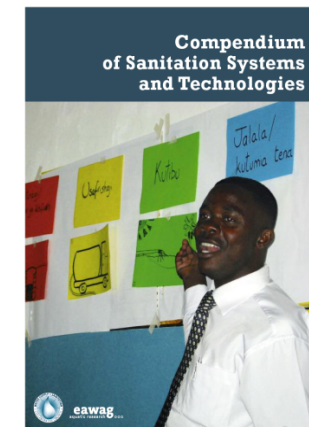
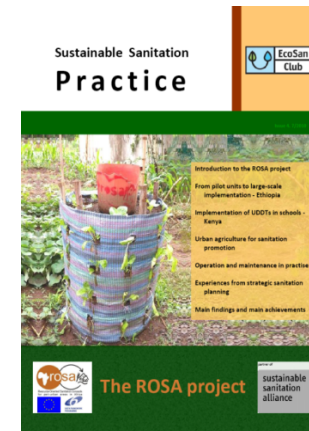


ROSA (Resource-Oriented Sanitation concepts for peri-urban areas in Africa, 09/2006-03/2010)

- ROSA successfully **implement pilots** for resources-oriented sanitation concepts in four pilot-cities in Eastern Africa
- For an **extended summary of ROSA see Issue 4 of the SSP journal** available on-line free of charge at <http://www.ecosan.at/ssp>

NETSSAF (Network for the development of Sustainable Approaches for large scale implementation of Sanitation in Africa, 06/2006-11/2008)

- **NETSSAF Participatory Planning Approach** (see <http://www.netssaftutorial.com/>)
- "**Compendium of sanitation systems and technologies**" (Tilley et al., 2008). also available from www.susana.org



CLARA main outcomes



Capacity-Linked water and sanitation
for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

1. CLARA simplified planning tool

- for the "technical part" of the whole planning process
- for resources-oriented sustainable integrated water supply and sanitation systems
- shall be used in practice by local consultants/planners/municipalities
- shall be tested in different countries (WP5 Case studies)

2. Technological and non-technological improvements of low-cost water supply and sanitation technologies and systems

- Field research will be carried out in Arba Minch, Ethiopia
- Topics: risks for water supply and re-use, solutions for multi-storey buildings, faecal sludge treatment, urine conditioning methods, **operation and maintenance, and financing mechanisms**

The CLARA planning tool in the planning process



Capacity-Linked water and sanitation for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

e.g. steps in the overall planning process as defined in the NETTSAF Participatory Planning Approach

STEP 1 Project start-up and launch of the planning process

STEP 2 Creation of demand for improved sanitation

STEP 3 *Description of settlement conditions, with assessment of existing sanitation situation and user priorities*

STEP 4 *Identification of feasible sanitation concepts and service systems*

STEP 5 Consolidation and finalisation of implementation plans for sustainable sanitation

STEP 6 Implementation

STEP 7 Participatory monitoring and evaluation

STEPS 3 + 4 → CLARA simplified planning tool

CLARA workpackages



Capacity-Linked water and sanitation
for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

WP1 Project management

WP2 Planning and preparation

WP3 Field Research

in Arba Minch, Tasks/topics: Risks for water supply and re-use, multi storey buildings, sludge treatment, urine conditioning methods, operation and maintenance, and financing mechanisms.

WP4 Methodological Research

develop CLARA simplified planning tool

WP5 Case studies

test CLARA simplified planning tool in Burkina Faso, Kenya, Morocco, South Africa and Ethiopia

WP6 Dissemination and exploitation

CLARA consortium



Capacity-Linked water and sanitation
for Africa's peri-urban and Rural Areas



<http://clara.boku.ac.at>

1. BOKU University - Austria (Co-ordinator) *
2. ttz Bremerhaven, Germany *
3. **EcoSan Club Consulting KG, Austria ***
4. BIOAZUL S.L., Spain *
5. Centre of Biotechnology of Sfax, Tunisia

Case studies

6. Egerton University, Kenya *
7. Water Research Commission, South Africa
8. CREPA , Burkina Faso *
9. Office National de l'Eau Potable, Morocco

Arba Minch

10. Arba Minch University, Ethiopia *
11. Arba Minch Water Supply and Sewerage Enterprise, Ethiopia *
12. Arba Minch Town Municipality, Ethiopia
13. 'Engan New Mayet' Compost Production Association, Ethiopia
14. 'Wubet le Arba Minch' Solid Waste Collectors, Ethiopia
15. Arba Minch Health Center, Ethiopia



EcoSan Club – Aktivitäten 2002-2012

5. Projekte – Implementierung

Lessons learnt (siehe SSP article, Issue 10)

1. Sanitation systems are only operated well if the owner has a **benefit from the system** (e.g. faecal compost, irrigation water, etc.). Treating wastewater only is not beneficial enough for owners to guarantee sustainable long-term operation of the system.
2. Operation and maintenance (**O&M**) needs **to be considered already in the planning phase** and the owners of the system need to be aware of the necessity and scope of O&M work. Extra in-depths training sessions might be needed e.g. for composting staffs.

EcoSan Club – Aktivitäten 2002-2012

5. Projekte – Implementierung

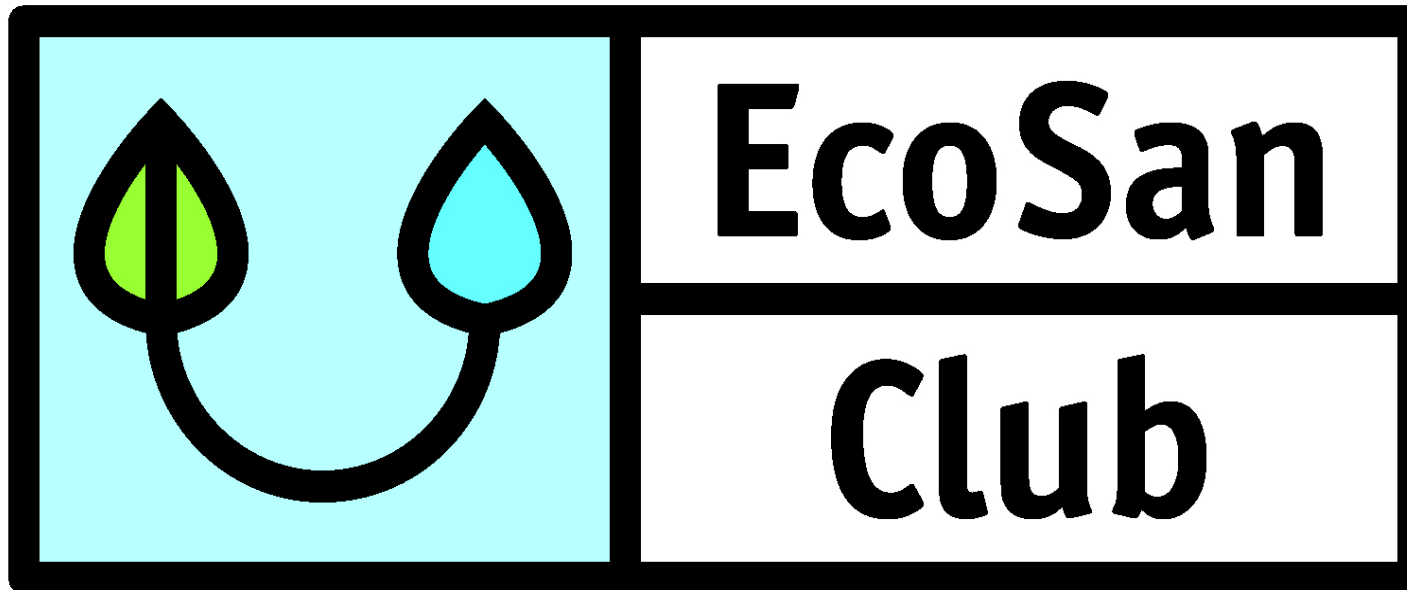
Lessons learnt (siehe SSP article, Issue 10)

3. Implementation partners often do lack capacity in the proposed technologies and therefore do not understand the systems that they shall construct. The outcome of this is poor or wrong implementation work. Therefore **more resources** need to be foreseen **for supervision** of construction work in the short run **and for capacity building** of local partners in the long run.
4. **Visits of** implementation **projects after the project ends** more likely result in successful project and need to be funded.
5. **Donors more likely invest in new infrastructure** than in rehabilitation of already existing infrastructure, capacity building, measures to ensure O&M, etc.

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Im Anschluss: Gemütliches Ausklingen des Abends



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